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OTHER NAMES:

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CN 4: PN: WO2008056726 SEQID: 5 claimed protein
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Sequence | Patent
Source | Reference
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**RELATED SEQUENCES AVAILABLE WITH SEQLINK**
MF Unspecified
CI
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    STN Files:
DT.CA CAplus document type: Patent
RL.P
      Roles from patents: BIOL (Biological study); PREP (Preparation); PRP
      (Properties); USES (Uses)
              1 REFERENCES IN FILE CA (1907 TO DATE)
              1 REFERENCES IN FILE CAPLUS (1907 TO DATE)
REFERENCE 1
                      148:554092 CA
ACCESSION NUMBER:
TITLE:
                       Glp-1 derivative and use thereof
INVENTOR(S):
                       Jomori, Takahito; Hayashi, Yuji; Makino, Mitsuhiro
PATENT ASSIGNEE(S):
                       Sanwa Kagaku Kenkyusho Co., Ltd., Japan
                       PCT Int. Appl., 25 pp.
SOURCE:
                       CODEN: PIXXD2
DOCUMENT TYPE:
                       Patent
LANGUAGE:
                       Japanese
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:
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    WO 2008056726 A1 20080515
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        W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA,
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RN 856221-77-7 REGISTRY

CN L-Arginine, L- α -glutamylglycyl-L-threonyl-L-phenylalanyl-L-threonyl-L-seryl-L- α -aspartyl-L-valyl-L-seryl-L-seryl-L-tyrosyl-L-leucyl-L- α -glutamylglycyl-L-glutaminyl-L-alanyl-L-alanyl-N6-acetyl-L-lysyl-L- α -glutamyl-L-phenylalanyl-L-isoleucyl-L-alanyl-L-tryptophyl-L-leucyl-L-valyl-N6-acetyl-L-lysylglycyl-L-arginyl- (CA INDEX NAME)

OTHER NAMES:

CN 11: PN: WO2005060986 SEQID: 11 claimed protein

FS PROTEIN SEQUENCE; STEREOSEARCH

SQL 29

NTE modified (modifications unspecified)

| type | | location - | | description | |
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| modification modification | Lys-18 Lys-26 | - | - | acetyl <ac> acetyl<ac></ac></ac> | |

PATENT ANNOTATIONS (PNTE):

SEQ 1 EGTFTSDVSS YLEGQAAKEF IAWLVKGRR

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RELATED SEQUENCES AVAILABLE WITH SEQLINK

MF C150 H229 N39 O47

SR CA

LC STN Files: CA, CAPLUS, TOXCENTER, USPATFULL

DT.CA CAplus document type: Patent

RL.P Roles from patents: BIOL (Biological study); PRP (Properties); USES (Uses)

Absolute stereochemistry.

PAGE 1-C

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

2 REFERENCES IN FILE CA (1907 TO DATE)
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

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ACCESSION NUMBER: 149:260057 CA

TITLE: GLP-1 (9-36) and its variants for inhibiting hyperglycemia or free fatty acid-induced reactive

hyperglycemia or free fatty acid-induced reactive oxygen formation in mammalian cells and thereby

preventing disease

INVENTOR(S): Brownlee, Michael A.

PATENT ASSIGNEE(S): Yeshiva University, USA; Albert Einstein College of

Medicine

SOURCE: U.S. Pat. Appl. Publ., 21 pp., Cont.-in-part of U.S.

Ser. No. 582,116.

CODEN: USXXCO

DOCUMENT TYPE: Patent LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

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                                        US 2003-529247P 20031212
                                        WO 2004-US40852 20041207
                                        US 2007-582116 20070626
REFERENCE 2
ACCESSION NUMBER: 143:91055 CA
TITLE:
                      Glp-1 (9-36) methods and compositions
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INVENTOR(S):

Brownlee, Michael A.
Albert Einstein College of Medicine of Yeshiva PATENT ASSIGNEE(S):

University, USA

SOURCE: PCT Int. Appl., 28 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

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OTHER NAMES:
CN 9: PN: WO2005060986 SEQID: 9 claimed protein
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       PROTEIN SEOUENCE; STEREOSEARCH
NTE modified (modifications unspecified)
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 type ----- location ----- description
modification Lys-26 - acetyl<Ac>
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PATENT ANNOTATIONS (PNTE):
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Sequence | Patent Source | Reference ======= Not Given | WO2005060986 | claimed SEQID

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HITS AT: 1-29

RELATED SEQUENCES AVAILABLE WITH SEQLINK

MF C148 H227 N39 O46

SR CA

LC STN Files: CA, CAPLUS, TOXCENTER, USPATFULL

DT.CA CAplus document type: Patent

RL.P Roles from patents: BIOL (Biological study); PRP (Properties); USES (Uses)

Absolute stereochemistry.

PAGE 1-C

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

2 REFERENCES IN FILE CA (1907 TO DATE)
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1

ACCESSION NUMBER: 149:260057 CA

TITLE: GLP-1 (9-36) and its variants for inhibiting hyperglycemia or free fatty acid-induced reactive

hyperglycemia or free fatty acid-induced reactive oxygen formation in mammalian cells and thereby

preventing disease

INVENTOR(S): Brownlee, Michael A.

PATENT ASSIGNEE(S): Yeshiva University, USA; Albert Einstein College of

Medicine

SOURCE: U.S. Pat. Appl. Publ., 21 pp., Cont.-in-part of U.S.

Ser. No. 582,116.

CODEN: USXXCO

DOCUMENT TYPE: Patent LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

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PRIORITY APPLN. INFO .:
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US 2003-529247P 20031212 WO 2004-US40852 20041207 US 2007-582116 20070626

REFERENCE 2

ACCESSION NUMBER: 143:91055 CA

TITLE: Glp-1 (9-36) methods and compositions

INVENTOR(S):

Brownlee, Michael A.
Albert Einstein College of Medicine of Yeshiva PATENT ASSIGNEE(S):

University, USA

SOURCE: PCT Int. Appl., 28 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

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                                                             APPLICATION NO. DATE
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                                              THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS
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OTHER NAMES:
      6: PN: WO2005060986 SEQID: 6 claimed protein
FS
       PROTEIN SEOUENCE; STEREOSEARCH
NTE modified (modifications unspecified)
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 type ----- location ----- description
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modification Lys-18 - acetyl<Ac>

PATENT ANNOTATIONS (PNTE):

Sequence | Patent Source | Reference

Not Given|WO2005060986 | claimed SEQID

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SEQ 1 EGTFTSDVSS YLEGQAAKEF IAWLVKGRR

HITS AT: 1-29

RELATED SEQUENCES AVAILABLE WITH SEQLINK

MF C148 H227 N39 O46

SR CA

LC STN Files: CA, CAPLUS, TOXCENTER, USPATFULL

DT.CA CAplus document type: Patent

RL.P Roles from patents: BIOL (Biological study); PRP (Properties); USES (Uses)

Absolute stereochemistry.

PAGE 1-C

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INVENTOR(S): Brownlee, Michael A.

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SOURCE: U.S. Pat. Appl. Publ., 21 pp., Cont.-in-part of U.S.

Ser. No. 582,116.

CODEN: USXXCO

DOCUMENT TYPE: Patent LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

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| WO | 2005 | 0609 | 86 | A | 1 | 2005 | 0707 | | M | 0 20 | 04-U | S408 | 52 | 2004 | 1207 | | | | |
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ACCESSION NUMBER:
                           143:91055 CA
TITLE:
                            Glp-1 (9-36) methods and compositions
INVENTOR(S):
                           Brownlee, Michael A.
PATENT ASSIGNEE(S):
                            Albert Einstein College of Medicine of Yeshiva
                            University, USA
                            PCT Int. Appl., 28 pp.
SOURCE:
                            CODEN: PIXXD2
DOCUMENT TYPE:
                            Patent
LANGUAGE:
                            English
FAMILY ACC. NUM. COUNT:
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FS PROTEIN SEOUENCE; STEREOSEARCH

SQL 29

PATENT ANNOTATIONS (PNTE):

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RELATED SEQUENCES AVAILABLE WITH SEQLINK

MF C146 H225 N39 O45

SR CA

LC STN Files: CA, CAPLUS, TOXCENTER, USPATFULL

DT.CA CAplus document type: Patent

RL.P Roles from patents: BIOL (Biological study); PRP (Properties); USES (Uses)

Absolute stereochemistry.

PAGE 1-D

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

2 REFERENCES IN FILE CA (1907 TO DATE)

2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1

ACCESSION NUMBER: 149:260057 CA

TITLE: GLP-1 (9-36) and its variants for inhibiting hyperglycemia or free fatty acid-induced reactive oxygen formation in mammalian cells and thereby

preventing disease

INVENTOR(S): Brownlee, Michael A.

PATENT ASSIGNEE(S): Yeshiva University, USA; Albert Einstein College of

Medicine

SOURCE: U.S. Pat. Appl. Publ., 21 pp., Cont.-in-part of U.S.

Ser. No. 582,116.

CODEN: USXXCO

DOCUMENT TYPE: Patent LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

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REFERENCE 2

ACCESSION NUMBER: 143:91055 CA

TITLE: Glp-1 (9-36) methods and compositions

INVENTOR(S): Brownlee, Michael A.

PATENT ASSIGNEE(S): Albert Einstein College of Medicine of Yeshiva

University, USA

SOURCE: PCT Int. Appl., 28 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

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ACCESSION NUMBER: 140:380655 CA
TITLE:
                                                                GLP-1 derivatives and transmucosal absorption
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                                                                Hayashi, Yuji; Makino, Mitsuhiro; Kouzaki, Toshiyuki;
INVENTOR(S):
                                                                 Takeda, Motohiro; Jomori, Takahito
                                                                Sanwa Kagaku Kenkyusho Co., Ltd., Japan
PATENT ASSIGNEE(S):
SOURCE:
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                                                                CODEN: PIXXD2
DOCUMENT TYPE:
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LANGUAGE:
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             WO 2004037859 A1 20040506 WO 2003-JP13020 20031010
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              1 REFERENCES IN FILE CAPLUS (1907 TO DATE)
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TITLE:
                        GLP-1 derivatives and transmucosal absorption
                        preparations thereof
                        Hayashi, Yuji; Makino, Mitsuhiro; Kouzaki, Toshiyuki;
INVENTOR(S):
                        Takeda, Motohiro; Jomori, Takahito
PATENT ASSIGNEE(S):
                        Sanwa Kagaku Kenkyusho Co., Ltd., Japan
SOURCE:
                        PCT Int. Appl., 48 pp.
                        CODEN: PIXXD2
DOCUMENT TYPE:
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LANGUAGE:
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FAMILY ACC. NUM. COUNT: 1
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Absolute stereochemistry.

PAGE 1-B

PAGE 1-D

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

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REFERENCE 1

ACCESSION NUMBER: 140:380655 CA

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preparations thereof

INVENTOR(S): Hayashi, Yuji; Makino, Mitsuhiro; Kouzaki, Toshiyuki;

Takeda, Motohiro; Jomori, Takahito

PATENT ASSIGNEE(S): Sanwa Kagaku Kenkyusho Co., Ltd., Japan

SOURCE: PCT Int. Appl., 48 pp.

CODEN: PIXXD2

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US 20060194720 A1 20060831 US 7291594 B2 20071106 US 2005-530125 20051027 PRIORITY APPLN. INFO.: JP 2002-299283 20021011 WO 2003-JP13020 20031010 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS REFERENCE COUNT: 3 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT L1ANSWER 9 OF 14 REGISTRY COPYRIGHT 2010 ACS on STN RN 682841-12-9 REGISTRY CN L-Arginine, L-histidyl-L-seryl-L-\alpha-qlutamylqlycyl-L-threonyl-Lphenylalanyl-L-threonyl-L-seryl-L- α -aspartyl-L-valyl-L-seryl-L-seryl- $L-tyrosyl-L-leucyl-L-\alpha-qlutamylqlycyl-L-qlutaminyl-L-alanyl-L-alanyl L-lysyl-L-\alpha-glutamyl-L-phenylalanyl-L-isoleucyl-L-alanyl-L$ tryptophyl-L-leucyl-L-valyl-L-lysylglycyl-L-arginyl-L-arginyl-L-arginyl-Larginyl-L-arginyl-L-arginyl-L-arginyl-L-arginyl- (9CI) (CA INDEX NAME) FS PROTEIN SEQUENCE SQL 38 1 HSEGTFTSDV SSYLEGQAAK EFIAWLVKGR RRRRRRRR SEO _________ 3-31 HITS AT: MFUnspecified CI MAN SR LC STN Files: CA, CAPLUS, USPAT2, USPATFULL DT.CA CAplus document type: Patent Roles from patents: BIOL (Biological study); PREP (Preparation); PRP (Properties); USES (Uses) 1 REFERENCES IN FILE CA (1907 TO DATE) 1 REFERENCES IN FILE CAPLUS (1907 TO DATE) REFERENCE 1 ACCESSION NUMBER: 140:380655 CA TITLE: GLP-1 derivatives and transmucosal absorption preparations thereof INVENTOR(S): Hayashi, Yuji; Makino, Mitsuhiro; Kouzaki, Toshiyuki; Takeda, Motohiro; Jomori, Takahito PATENT ASSIGNEE(S): Sanwa Kagaku Kenkyusho Co., Ltd., Japan SOURCE: PCT Int. Appl., 48 pp. CODEN: PIXXD2 DOCUMENT TYPE: Patent LANGUAGE: Japanese FAMILY ACC. NUM. COUNT: 1 PATENT INFORMATION: PATENT NO. KIND DATE APPLICATION NO. DATE ____ _____ ______ ______ WO 2004037859 A1 20040506 WO 2003-JP13020 20031010 W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG A1 20040506 CA 2003-2502118 20031010 CA 2502118

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ACCESSION NUMBER:
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TITLE:
                         GLP-1 derivatives and transmucosal absorption
                         preparations thereof
INVENTOR(S):
                         Hayashi, Yuji; Makino, Mitsuhiro; Kouzaki, Toshiyuki;
                         Takeda, Motohiro; Jomori, Takahito
PATENT ASSIGNEE(S):
                         Sanwa Kagaku Kenkyusho Co., Ltd., Japan
SOURCE:
                         PCT Int. Appl., 48 pp.
                         CODEN: PIXXD2
DOCUMENT TYPE:
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LANGUAGE:
                         Japanese
FAMILY ACC. NUM. COUNT: 1
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ACCESSION NUMBER:
                                           140:380655 CA
TITLE:
                                           GLP-1 derivatives and transmucosal absorption
                                           preparations thereof
INVENTOR(S):
                                           Hayashi, Yuji; Makino, Mitsuhiro; Kouzaki, Toshiyuki;
                                           Takeda, Motohiro; Jomori, Takahito
PATENT ASSIGNEE(S):
                                           Sanwa Kagaku Kenkyusho Co., Ltd., Japan
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CODEN: PIXXD2

DOCUMENT TYPE: Patent LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

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REFERENCE COUNT:
                              RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT
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               1 REFERENCES IN FILE CA (1907 TO DATE)
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REFERENCE 1
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ACCESSION NUMBER: 140:380655 CA

TITLE: GLP-1 derivatives and transmucosal absorption

preparations thereof

INVENTOR(S): Hayashi, Yuji; Makino, Mitsuhiro; Kouzaki, Toshiyuki;

Takeda, Motohiro; Jomori, Takahito

Sanwa Kagaku Kenkyusho Co., Ltd., Japan PATENT ASSIGNEE(S):

SOURCE: PCT Int. Appl., 48 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT:

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| AU | 2003 | 2729 | 70 | A. | 1 | 2004 | 0513 | | A | J 20 | 03-2 | 7297 | 0 | 2003 | 1010 | | |
| AU | 2003 | 2729 | 70 | B | 2 | 2009 | 0528 | | | | | | | | | | |
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FILE LAST UPDATED: 5 Mar 2010 (20100305/ED)

REVISED CLASS FIELDS (/NCL) LAST RELOADED: Dec 2009

USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Dec 2009

CAplus now includes complete International Patent Classification (IPC) reclassification data for the third quarter of 2009.

CAS Information Use Policies apply and are available at:

http://www.cas.org/legal/infopolicy.html

This file contains CAS Registry Numbers for easy and accurate substance identification.

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L6 ANSWER 1 OF 28 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2008:1180202 CAPLUS

DOCUMENT NUMBER: 149:418175

TITLE: Stable GLP-1 fusion peptides, their production and use

in treating diabetes and other disorders

INVENTOR(S): Wallrapp, Christine; Thoenes, Eric; Geigle, Peter

PATENT ASSIGNEE(S): Biocompatibles UK Ltd., UK

SOURCE: PCT Int. Appl., 86pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

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PRIORITY APPLN. INFO.:
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OTHER SOURCE(S): MARPAT 149:418175

The present invention provides novel fusion peptides having GLP-1 activity and enhanced stability in vivo, in particular resistancy to dipeptidyl peptidase IV. The fusion peptide comprises as component (I) N-terminally a GLP-1 (7-35, 7-36 or 7-37) sequence and as component (II) C-terminally a peptide sequence of at least 9 amino acids or a functional fragment, variant or derivative thereof. Component (II) is preferably a full or partial version of a homolog of native IP2 (intervening peptide 2). A preferred embodiment comprises the sequence GLP-1 (7-35, 36 or 37)/IP2homolog/GLP-1(7-35, 36 or 37) or GLP-2. The fusion peptide may be produced in engineered cells or synthetically and may be used for the preparation of a medicament for treating various diseases or disorders, e.g. diabetes type 1 or 2, apoptosis related diseases or neurodegenerative disorders. The present invention provides novel fusion peptides having GLP-1 activity and enhanced stability in vivo, in particular resistancy to dipeptidyl peptidase IV. The fusion peptide comprises as component (I) N-terminally a GLP-1(7-35, 7-36 or 7-37) sequence and as component (II) C-terminally a peptide sequence of at least 9 amino acids or a functional fragment, variant or derivative thereof. Component (II) is preferably a full or partial version of a homolog of native IP2 (intervening peptide 2). A preferred embodiment comprises the sequence GLP-1(7-35, 36 or 37)/IP2-homolog/GLP-1(7-35, 36 or 37) or GLP-2. The fusion peptide may be produced in engineered cells or synthetically and may be used for the preparation of a medicament for treating various diseases or disorders, e.g. diabetes type 1 or 2, apoptosis related diseases or neurodegenerative disorders.

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ANSWER 2 OF 28 CAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER:
                       2008:1179758 CAPLUS
DOCUMENT NUMBER:
                       149:418174
TITLE:
                       Stable GLP-1 fusion peptides, their production and use
                       in treating diabetes and other disorders
                      Wallrapp, Christine; Thoenes, Eric; Geigle, Peter
INVENTOR(S):
PATENT ASSIGNEE(S): Biocompatibles Uk Ltd., UK
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SOURCE: Eur. Pat. Appl., 83 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

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| | יים ול יצי | SK, | | | | | | | | DD 0 | 007 | (221 | | 7 00000000 | | | | |
| PRIORIT | I APP | тИ. | TNEO | . : | | | | | EP 2007-6321 WO 2008-EP2414 | | | | | | | | | |
| | | | | | | | | | | WO 2 | 008- | EP24 | 14 | 1 | N 2 | 0080 | 321 | |

AB The present invention provides novel fusion peptides having GLP-1 activity and enhanced stability in vivo, in particular resistancy to dipeptidyl peptidase IV. The fusion peptide comprises as component (II) N-terminally a GLP-1(7-35, 7-36 or 7-37) sequence and as component (II) C-terminally a peptide sequence of at least 9 amino acids or a functional fragment, variant or derivative thereof. Component (II) is preferably a full or partial version of a homolog of native IP2 (intervening peptide 2). A preferred embodiment comprises the sequence GLP-1(7-35, 36 or 37)/IP2-homolog/GLP-1(7-35, 36 or 37) or GLP-2. The fusion peptide may be produced in engineered cells or synthetically and may be used for the preparation of a medicament for treating various diseases or disorders, e.g. diabetes type 1 or 2, apoptosis related diseases or neurodegenerative disorders.

REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 3 OF 28 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2008:1157789 CAPLUS

DOCUMENT NUMBER: 149:395038

TITLE: Stable GLP-1 fusion peptides conjugated to synthetic or natural polymer(s), their production and use for

treating diabetes and other diseases

INVENTOR(S): Wallrapp, Christine; Thoenes, Eric; Geigle, Peter

PATENT ASSIGNEE(S): Biocompatibles UK Ltd., UK SOURCE: PCT Int. Appl., 122pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

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PATENT NO.
                   KIND DATE APPLICATION NO. DATE
     WO 2008113601 A1 20080925 WO 2008-EP2278 20080320
        W: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ,
             CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES,
             FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE,
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             ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH,
             PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM,
             TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW
         RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU,
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             TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW,
             AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
                         A1 20080924 EP 2007-5831
                                                                  20070321
     EP 1972349
        R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,
             IS, IT, LI, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR,
             AL, BA, HR, MK, RS
                               20091125 EP 2008-734709
     EP 2121032
                         A1
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PRIORITY APPLN. INFO.:
                                            EP 2007-5831
                                                             A 20070321
                                            WO 2008-EP2278
                                                                W 20080320
                        MARPAT 149:395038
OTHER SOURCE(S):
    The present invention provides fusion peptides having GLP-1 activity and
     enhanced stability in vivo, in particular resistancy to dipeptidyl
     peptidase IV conjugated to polymers, thereby forming conjugate mols.
     fusion peptide of the conjugate mol. comprises as component (I)
     N-terminally a GLP-1 (7-35, 7-36 \text{ or } 7-37) sequence and as component (II)
     C-terminally a peptide sequence of at least 9 amino acids or a functional
     fragment, variant or derivative thereof. A synthetic polymer and/or a
     protein, e.g transferrin or albumin, is covalently or non-covalently bound
     to the fusion peptide to form the conjugate mol. Component (II) is
     preferably a full or partial version of IP2 (intervening peptide 2). A
     preferred embodiment comprises the sequence GLP-1 (7-35, 36 or
     37)/IP2/GLP-1 (7-35, 36 or 37) or GLP-2 and a polymeric component, e.g. a
     natural or non-natural polymer. The fusion peptide may be produced in
     engineered cells or synthetically and is e.g. conjugated to the polymeric
     component by chemical synthesis. The conjugate mol. may be used for the
     preparation of a medicament for treating various diseases or disorders, e.g.
     diabetes type 1 or 2, apoptosis related diseases or
     neurodegenerative disorders.
REFERENCE COUNT:
                         6
                               THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS
                               RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT
    ANSWER 4 OF 28 CAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER:
                         2008:1151323 CAPLUS
                         149:395037
DOCUMENT NUMBER:
TITLE:
                         Stable GLP-1 fusion peptides conjugated to synthetic
                         or natural polymer(s), their production and use for
                         treating diabetes and other diseases
                        Geigle, Peter; Wallrapp, Christine; Thoenes, Eric
INVENTOR(S):
                        Biocompatibles Uk Limited, UK
PATENT ASSIGNEE(S):
SOURCE:
                        Eur. Pat. Appl., 120pp.
                        CODEN: EPXXDW
DOCUMENT TYPE:
                        Patent
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FAMILY ACC. NUM. COUNT: 2

LANGUAGE:

English

PATENT INFORMATION:

AB

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PATENT NO.
                    KIND DATE APPLICATION NO. DATE
     EP 1972349 A1 20080924 EP 2007-5831 20070321
        R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,
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             AL, BA, HR, MK, RS
                                20080925
                                            WO 2008-EP2278
                                                                    20080320
     WO 2008113601
                         A1
             AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ,
             CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES,
             FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE,
             KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD,
             ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH,
             PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM,
             TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW
         RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU,
             IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK,
             TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW,
             AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
                         A1 20091125 EP 2008-734709
                                                                    20080320
     EP 2121032
         R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LI, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI,
                                                               A 20070321
W 20080320
PRIORITY APPLN. INFO.:
                                             EP 2007-5831
                                             WO 2008-EP2278
     The present invention provides fusion peptides having GLP-1 activity and
     enhanced stability in vivo, in particular resistancy to dipeptidyl
     peptidase IV, conjugated to polymers, thereby forming conjugate mols.
     fusion peptide of the conjugate mol. comprises as component (I)
     N-terminally a GLP-1(7-35, 7-36 or 7-37) sequence and as component (II)
     C-terminally a peptide sequence of at least 9 amino acids or a functional
     fragment, variant or derivative thereof. A synthetic polymer and/or a
     protein, e.g transferrin or albumin, is covalently or non-covalently bound
     to the fusion peptide to form the conjugate mol. Component (II) is
     preferably a full or partial version of IP2 (intervening peptide 2). A
     preferred embodiment comprises the sequence GLP-1(7-35, 36 or
     37)/IP2/GLP-1(7-35, 36 \text{ or } 37) or GLP-2 and a polymeric component, e.g. a
     natural or non-natural polymer. The fusion peptide may be produced in
     engineered cells or synthetically and is e.g. conjugated to the polymeric
     component by chemical synthesis. The conjugate mol. may be used for the
     preparation of a medicament for treating various diseases or disorders, e.g.
     diabetes type 1 or 2, apoptosis related diseases or
     neurodegenerative disorders.
REFERENCE COUNT:
                         6
                               THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS
                               RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT
     ANSWER 5 OF 28 CAPLUS COPYRIGHT 2010 ACS on STN
                         2008:981885 CAPLUS
ACCESSION NUMBER:
DOCUMENT NUMBER:
                         149:260057
                         GLP-1 (9-36) and its variants for inhibiting
TITLE:
                         hyperglycemia or free fatty acid-induced
                         reactive oxygen formation in mammalian cells and
                         thereby preventing disease
                         Brownlee, Michael A.
INVENTOR(S):
                         Yeshiva University, USA; Albert Einstein College of
PATENT ASSIGNEE(S):
                         Medicine
                         U.S. Pat. Appl. Publ., 21 pp., Cont.-in-part of U.S.
SOURCE:
                         Ser. No. 582,116.
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DOCUMENT TYPE: Patent

CODEN: USXXCO

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO. KIND DATE APPLICATION NO. DATE ____ _____ _____ US 20080194483 A1 20080814 US 2008-8362 20080110 WO 2005060986 A1 20050707 WO 2004-US40852 20041207 W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG US 20080015144 A1 20080117 US 2007-582116 20070626 US 2003-529247P P 20031212 PRIORITY APPLN. INFO.: W 20041207 WO 2004-US40852 US 2007-582116 A2 20070626

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT Methods of inhibiting hyperglycemia-induced or free fatty acid-induced reactive oxygen formation in mammalian cells and mammals using the degradation product of glucagon-like peptide 1, GLP-1 (9-36) are provided. Various GLP-1 (9-36) variants are also provided. The cell is selected from the group consisting of a nerve cell, a renal mesangial cell, a pancreatic β cell, an adipocyte, a cardiac myocyte, an endothelial cell or a hepatocyte. In other embodiments, the invention is directed to methods of inhibiting the development of disease due to diabetes, impaired glucose tolerance, stress hyperglycemia , metabolic syndrome, insulin resistance, ischemia/reperfusion injury, endotoxin injury, non alc. steatohepatitis (NASH), alc. liver disease, and/or impaired glucose-stimulated insulin secretion in a mammal, or conditions resulting therefrom. The disease is an atherosclerotic, microvascular, or neurol. disease. More specifically the disease is selected from the group consisting of coronary disease, myocardial infarction, atherosclerotic peripheral vascular disease, cerebrovascular disease, stroke, retinopathy, renal disease, neuropathy, and cardiomyopathy.

L6 ANSWER 6 OF 28 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2008:874968 CAPLUS

DOCUMENT NUMBER: 149:239352

TITLE: Fusion protein of human glucagon-like peptide-1 and

application thereof

INVENTOR(S): Luo, Xiaoxing; Hui, Hongxiang; Ma, Xue

PATENT ASSIGNEE(S): Fourth Military Medical University, Pla, Peop. Rep.

China

SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 21pp.

CODEN: CNXXEV

DOCUMENT TYPE: Patent LANGUAGE: Chinese

FAMILY ACC. NUM. COUNT: 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|------------------|----------|
| | | | | |
| CN 101220088 | A | 20080716 | CN 2007-10018734 | 20070924 |
| PRIORITY APPLN. INFO.: | | | CN 2007-10018734 | 20070924 |

OTHER SOURCE(S): MARPAT 149:239352

AB The title fusion protein consists of n segments of peptide A (GLP-1(7-37) [SEQID No.1]) and n segments of peptide B (GLP-2(1-33) [SEQID No.2]). The inventive fusion protein is a prodrug that releases human glucagon-like peptide-1 (GLP-1) after enzymic degradation and thereby has pharmacol. action, and has high bioactivity and long half-time in vivo. The fusion protein can be used to treat or prevent disease or dysfunction associated with GLP-1, especially non-insulin-dependent diabetes mellitus. The invention has the advantages of low cost, simple operation, readily available raw material, and possible commercialized production

L6 ANSWER 7 OF 28 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2008:586638 CAPLUS

DOCUMENT NUMBER: 148:554092

TITLE: Glp-1 derivative and use thereof

INVENTOR(S): Jomori, Takahito; Hayashi, Yuji; Makino, Mitsuhiro

PATENT ASSIGNEE(S): Sanwa Kagaku Kenkyusho Co., Ltd., Japan

SOURCE: PCT Int. Appl., 25 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

| PAT | PATENT NO. | | | | | D | DATE | | 1 | APPL | ICAT | ION 1 | NO. | | | ATE | |
|----------|------------|----------|------|------|------|-----|------|------|------|-------|-------|-------|---------|-----|------|-------|------|
| WO | 2008 | 0567 | 26 | | A1 | | 2008 | 0515 | 1 | WO 2 | 007- | JP71 | 687 | | | 0071 | |
| | W: | ΑE, | AG, | AL, | AM, | ΑT, | AU, | AZ, | BA, | BB, | BG, | BH, | BR, | BW, | BY, | BZ, | CA, |
| | | CH, | CN, | CO, | CR, | CU, | CZ, | DE, | DK, | DM, | DO, | DΖ, | EC, | EE, | EG, | ES, | FI, |
| | | GB, | GD, | GE, | GH, | GM, | GT, | HN, | HR, | HU, | ID, | IL, | IN, | IS, | JP, | KE, | KG, |
| | | KM, | KN, | KP, | KR, | KΖ, | LA, | LC, | LK, | LR, | LS, | LT, | LU, | LY, | MA, | MD, | ME, |
| | | MG, | MK, | MN, | MW, | MX, | MY, | MZ, | NΑ, | NG, | ΝI, | NO, | ΝZ, | OM, | PG, | PH, | PL, |
| | PT, RO, RS | | | | | SC, | SD, | SE, | SG, | SK, | SL, | SM, | SV, | SY, | ТJ, | TM, | TN, |
| | | TR, | TT, | TZ, | UA, | UG, | US, | UΖ, | VC, | VN, | ZA, | ZM, | ZW | | | | |
| | RW: | ΑT, | BE, | BG, | CH, | CY, | CZ, | DE, | DK, | EE, | ES, | FΙ, | FR, | GB, | GR, | HU, | ΙE, |
| | | IS, | ΙΤ, | LT, | LU, | LV, | MC, | MT, | NL, | PL, | PT, | RO, | SE, | SI, | SK, | TR, | BF, |
| | | ВJ, | CF, | CG, | CI, | CM, | GΑ, | GN, | GQ, | GW, | ML, | MR, | ΝE, | SN, | TD, | TG, | BW, |
| | | GH, | GM, | KΕ, | LS, | MW, | MΖ, | NΑ, | SD, | SL, | SZ, | TZ, | UG, | ZM, | ZW, | AM, | ΑZ, |
| | | | | | | | ТJ, | | | | | | | | | | |
| JP | 2010 | 0430 | 01 | | A | | 2010 | 0225 | | JP 2 | 006- | 3043 | 80 | | 20 | 0061 | 109 |
| PRIORITY | APP | LN. | INFO | .: | | | | | | JP 2 | 006- | 3043 | 80 | 2 | A 20 | J061: | 109 |
| AB [PF | ROBLE | MS1 | g oT | rovi | de a | nov | el G | LP-1 | der. | ivat: | ive : | havi | na a | lar | relv | imp | rove |

AB [PROBLEMS] To provide a novel GLP-1 derivative having a largely improved capability of being absorbed through a mucous membrane. [MEANS FOR SOLVING PROBLEMS] Disclosed is a peptide which has (Lys)n-Arg [wherein n represents an integer of 4 to 8, and Arg is in the form of a carboxylic acid] added to the C-terminus of a peptide comprising an amino acid sequence corresponding to GLP-1 (7-35) or GLP-1 (7-36) or an amino acid sequence having the deletion, substitution and/or addition of one or several amino acid residues in the aforementioned amino acid sequence, having at least 85% homol. to the aforementioned amino acid sequence and having a GLP-1 activity. The amino acid residue at position-8 in the amino acid sequence for GLP-1 is preferably serine or glycine, and the integer "n" is preferably 5.

REFERENCE COUNT: 46 THERE ARE 46 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 8 OF 28 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2007:1303151 CAPLUS

DOCUMENT NUMBER: 147:548045

TITLE: Spherical microcapsules comprising human mesenchymal stem cells expressing and secreting GLP-1 peptides and

uses in treating diabetes

INVENTOR(S): Geigle, Peter; Wallrapp, Christine; Thoenes, Eric;

Thuermer, Frank

PATENT ASSIGNEE(S): Biocompatibles UK Ltd., UK

SOURCE: PCT Int. Appl., 95 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PA: | TENT | NO. | | | KIN: | D | DATE | | | APPI | LICAT | ION | NO. | | D. | ATE | |
|--------|------------------------|--------------------------|-----|-----|------|-----|------|------|-------|------|-------|------|------|------|-----|------|-----|
| WO | 2007 | 1284 | 43 | | A2 | | 2007 | 1115 | | | | | | | | | |
| WO | 2007 | | | | | | | | | | | | | | | | |
| | ₩: | | | | | | | | | | BG, | | | | | | |
| | | | | | | | | | | | DZ, | | | | | | |
| | | | • | | | | | | | | IL, | | • | | | | |
| | | | | | | | | | | | LT, | | | | | | |
| | | | | | | | | | | | NZ, | | | | | | |
| | | | | | | | | | | , | sv, | SY, | ΤJ, | TM, | TN, | TR, | ΤΤ, |
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| | | ВJ, | CF, | CG, | CI, | CM, | GΑ, | GN, | GQ, | GW, | ML, | MR, | ΝE, | SN, | TD, | ΤG, | BW, |
| | GH, GM, K BY, KG, K | | | | | | | | | | | | UG, | ZM, | ZW, | ΑM, | ΑZ, |
| | BY, KG, K | | | | MD, | RU, | ТJ, | TM, | ΑP, | EA, | EP, | ΟA | | | | | |
| EP | 1854 | BY, KG, K2 1854455 | | | | | 2007 | 1114 | | EP 2 | 2006- | 9678 | | | 2 | 0060 | 510 |
| EP | 1854 | 455 | | | В1 | | 2009 | 1007 | | | | | | | | | |
| | R: | ΑT, | BE, | BG, | CH, | CY, | CZ, | DE, | DK, | EE, | ES, | FΙ, | FR, | GB, | GR, | HU, | ΙE, |
| | | IS, | ΙΤ, | LI, | LT, | LU, | LV, | MC, | NL, | PL, | PT, | RO, | SE, | SI, | SK, | TR, | AL, |
| | | | | MK, | | | | | | | | | | | | | |
| ΑT | 4447 2007 | 41 | | | T | | 2009 | 1015 | | AT 2 | 2006- | 9678 | | | 2 | 0060 | 510 |
| AU | 2007 | 2475 | 11 | | A1 | | 2007 | 1115 | | AU 2 | 2007- | 2475 | 11 | | 2 | 0070 | 427 |
| CA | 2649 | 902 | | | A1 | | 2007 | 1115 | | CA 2 | 2007- | 2649 | 902 | | 2 | 0070 | 427 |
| EP | 2015 | 736 | | | A2 | | 2009 | 0121 | | EP 2 | 2007- | 7247 | 02 | | 2 | 0070 | 427 |
| | R: | ΑT, | BE, | BG, | CH, | CY, | CZ, | DE, | DK, | EE, | ES, | FΙ, | FR, | GB, | GR, | HU, | ΙE, |
| | | IS, | ΙT, | LI, | LT, | LU, | LV, | MC, | MΤ, | NL, | PL, | PT, | RO, | SE, | SI, | SK, | TR, |
| | | IS, IT, LI AL, BA, HR | | | | RS | | | | | | | | | | | |
| JP | 2009 | 5361 | 66 | | T | | 2009 | 1008 | | JP 2 | 2009- | 5081 | 85 | | 2 | 0070 | 427 |
| IN | IN 2008DN09530 | | | | | | 2009 | 0619 | | IN 2 | 2008- | DN95 | 30 | | 2 | 0081 | 114 |
| CN | CN 101489539 | | | | | | 2009 | 0722 | | CN 2 | 2007- | 8002 | 6009 | | 2 | 0090 | 109 |
| ORIT | Y APP | .: | | | | | | EP 2 | 2006- | 9678 | | 1 | A 2 | 0060 | 510 | | |
| | | | | | | | | WO 2 | 2007- | EP37 | 75 | 1 | W 2 | 0070 | 427 | | |
| HER SO | OURCE | (S): | | | MAR | PAT | 147: | 5480 | 45 | | | | | | | | |

OTHER SOURCE(S): MARPAT 147:548045

AB The present invention provides spherical microcapsules comprising at least one surface coating and a core, wherein the at least one surface coating comprises cross-linked polymers, and wherein the core comprises cross-linked polymers and cells capable of expressing and secreting a GLP-1 peptide, a fragment or variant thereof or a fusion peptide comprising GLP-1 or a fragment or variant thereof. The present application is furthermore directed to methods for production of these spherical microcapsules and to the use of these microcapsules e.g. in the treatment of type 2 diabetes, weight disorders, neurodegenerative disorders or for the treatment of disorders and diseases or conditions associated to apoptosis. The cells contained in the core of the spherical microcapsule are selected from human mesenchymal stem cells, differentiated cells derived from human mesenchymal stem cells, including osteoblasts, chondrocytes, fat cells (adipocytes), or neuron-like cells including brain cells.

DOCUMENT NUMBER: 146:351951

TITLE: Glp-1 (glucagon-like peptide-1) fusion polypeptides

with increased peptidase resistance

INVENTOR(S): Geigle, Peter; Wallrapp, Christine; Thoenes, Eric

PATENT ASSIGNEE(S): Biocompatibles UK Limited, UK

SOURCE: Eur. Pat. Appl., 55pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| | PAI | ENT | | | | KIN |) | DATE | | | | | TION | NO. | | D. | ATE | |
|----|-----|--------------|------|------|-----|-----|-----|--------------|------|-----|----|-------|-------|-----|-----|-----|------|-----|
| | EP | 1767 | | | | A1 | | | | | | | -2071 | 8 | | 2 | 0050 | 922 |
| | ΕP | 1767 | 545 | | | В1 | | 2009 | 1111 | | | | | | | | | |
| | | R: | AT, | BE, | BG, | CH, | CY, | CZ, | DE, | DK, | EE | , ES | , FI, | FR, | GB, | GR, | HU, | IE, |
| | | | IS, | IT, | LI, | LT, | LU, | LV, | MC, | NL, | PL | , PT | , RO, | SE, | SI, | SK, | TR, | AL, |
| | | | BA, | HR, | MK, | YU | | | | | | | | | | | | |
| | EΡ | 2045 | 265 | | | A1 | | 2009 | 0408 | | EΡ | 2008 | -2183 | 7 | | 2 | 0050 | 922 |
| | | R: | AT, | BE, | BG, | CH, | CY, | CZ, | DE, | DK, | EE | , ES | , FI, | FR, | GB, | GR, | HU, | IE, |
| | | | IS, | IT, | LI, | LT, | LU, | LV, | MC, | NL, | ΡL | , PT | , RO, | SE, | SI, | SK, | TR, | AL, |
| | | | BA, | HR, | MK, | YU | | | | | | | | | | | | |
| | ΑT | 4482 | 47 | | | T | | 2009 | 1115 | | ΑT | 2005 | -2071 | 8 | | 2 | 0050 | 922 |
| | ΑU | 2006 | 2991 | 34 | | A1 | | 2007 | 0412 | | ΑU | 2006 | -2991 | 34 | | 2 | 0060 | 922 |
| | CA | 2619 | 053 | | | A1 | | 2007 | 0412 | | CA | 2006 | -2619 | 053 | | 2 | 0060 | 922 |
| | WΟ | 2007 | 0391 | 40 | | A1 | | 2007 | 0412 | | WO | 2006 | -EP92 | 26 | | 2 | 0060 | 922 |
| | | W: | ΑE, | AG, | AL, | AM, | AT, | AU, | ΑZ, | BA, | BB | , BG | , BR, | BW, | BY, | BZ, | CA, | CH, |
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| | | | GE, | GH, | GM, | HN, | HR, | HU, | ID, | IL, | IN | I, IS | , JP, | ΚE, | KG, | KM, | KN, | KP, |
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| | | | GM, | ΚE, | LS, | MW, | MΖ, | NΑ, | SD, | SL, | SZ | , TZ | , UG, | ZM, | ZW, | AM, | ΑZ, | BY, |
| | | | KG, | KΖ, | MD, | RU, | | | | | | | | | | | | |
| | EΡ | 1926 | 748 | | | A1 | | 2008 | 0604 | | EΡ | 2006 | -7922 | 28 | | 2 | 0060 | 922 |
| | | R: | | | • | | | | • | | | • | , FI, | | • | • | | IE, |
| | | | | | | | | | | | | | , RO, | | | | | |
| | JΡ | 2009 2008 | 5085 | 05 | | T | | 2009 | | | | | -5316 | | | 2 | 0060 | 922 |
| | | | | 88 | | A | | 2009 | 1028 | | ZA | 2008 | -3488 | | | 2 | 0060 | 922 |
| | ΙN | 2008 | DN00 | 642 | | A | | 2008 2008 | 0711 | | IN | 2008 | -DN64 | 2 | | 2 | 0800 | 123 |
| | | 2008 | | 91 | | A | | 2008 | 0410 | | MΧ | 2008 | -3591 | | | | 0080 | |
| | | 1012 | | 8 | | A | | 2008 | | | | | -8003 | | | | | |
| | | 2008 | | | | А | | 2008 | 0709 | | | | -7095 | | | | 0800 | |
| OR | ITI | APP | LN. | INFO | .: | | | | | | | | -2071 | | | | | |
| | | | | | | | | | | | WO | 2006 | -EP92 | 26 | 1 | W 2 | 0060 | 922 |

AB The present invention provides fusion peptides having GLP-1 activity and enhanced stability in vivo, in particular resistancy to dipeptidyl peptidase IV. The fusion peptide comprises as component (I) N-terminally a GLP-1(7-35, 7-36 or 7-37) sequence and as component (II) C-terminally a peptide sequence of at least 9 amino acids or a functional fragment, variant or derivative thereof. Component (II) is preferably a full or partial version of IP2 (intervening peptide 2). A preferred embodiment comprises the sequence GLP-1 (7-35, 36 or 37)/IP2/GLP-1(7-35, 36 or 37) or GLP-2. The fusion peptide may be produced in engineered cells or synthetically and may be used for the preparation of a medicament for treating various diseases or disorders, e.g. diabetes type 1 or 2, apoptosis related diseases or neurodegenerative disorders.

OS.CITING REF COUNT: 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD

(3 CITINGS)

REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS

RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

ANSWER 10 OF 28 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2006:736536 CAPLUS

DOCUMENT NUMBER: 145:159868

TITLE: Stem cell and/or progenitor cells transplantation and

methods for treating diabetes

INVENTOR(S): Harman, Mitchell
PATENT ASSIGNEE(S): Kronos Longevity Research Institute, USA
SOURCE: PCT Int. Appl., 60 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Pat.ent. English LANGUAGE:

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PAT | ENT : | NT NO. | | | | D | DATE | | | APPL | ICAT | ION | NO. | | D | ATE | |
|----------|--------|---|------|------|----------|-----|--------------|-----|-----|------|------|------|-----|-----|-----|------|-----|
| | 2006 | – | • | | A2 A3 | | 2006 2007 | - | , | WO 2 | 006- | US26 | 26 | | 2 | 0060 | 123 |
| WO | | AE, | AG, | AL, | AM, | AT, | AU, | AZ, | | • | | | | • | | | • |
| | | · | | | | HU, | ID, | IL, | IN, | IS, | JP, | KE, | KG, | KM, | KN, | KP, | KR, |
| | | KZ, LC, LK, MZ, NA, NG, SG, SK, SL, | | | NΙ, | NO, | NΖ, | OM, | PG, | PH, | PL, | PT, | RO, | RU, | SC, | SD, | SE, |
| | RW: | VN, | YU, | ZA, | ZM, | ZW | CZ, | | · | · | • | • | | • | • | | · |
| | 2477 • | IS, | IT, | LT, | LU, | LV, | MC, GN, | NL, | PL, | PT, | RO, | SE, | SI, | SK, | TR, | BF, | вJ, |
| | | GM, | KE, | LS, | MW, | MZ, | NA, TM, | SD, | SL, | SZ, | TZ, | • | | • | | | • |
| PRIORITY | | LN. | INFO | .: ` | | | • | · | , | US 2 | 005- | | | | P 2 | 0050 | 122 |

AΒ The present invention relates to treatments for diabetes, particularly type 1 diabetes of human. The invention relates to methods and compns. for administering donor cells (e.g., stem cells and/or progenitor cells) to a type 1 diabetic subject and differentiating the stem cells in vivo to produce insulin secreting cells. Certain aspects of the invention relate to kits including one or more donor cells and/or pancreatic differentiation factors and/or immunosuppressant agents.

ANSWER 11 OF 28 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2006:209376 CAPLUS

DOCUMENT NUMBER: 144:247750

TITLE: Induction of hormone gene expression and insulin secretion in pancreatic β cells by islet cell

autoantigen ICA512

Trajkovski, Mirko; Mziaut, Hassan; Solimena, Michele INVENTOR(S): Technische Universitaet Dresden Medizinische Fakultaet PATENT ASSIGNEE(S):

Carl Gustav Carus, Germany Eur. Pat. Appl., 63 pp.

SOURCE:

CODEN: EPXXDW

DOCUMENT TYPE: Patent LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

APPLICATION NO. DATE PATENT NO. KIND DATE ____

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                        A1 20060308 EP 2004-20912
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                      A1 20060323 CA 2005-2578940 20050902
     CA 2578940
     WO 2006029728
                         A1
                               20060323
                                          WO 2005-EP9473
                                                                  20050902
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             GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,
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                        A1 20070516 EP 2005-791045
     EP 1784207
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     US 20090131309
                         A1
                               20090521
                                                                   20080201
                                                              A 20040902
W 20050902
PRIORITY APPLN. INFO.:
                                            EP 2004-20912
                                            WO 2005-EP9473
ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT
    Islet cell autoantigen ICA512 and C-terminal fragments derived from it are
     found to be capable of inducing insulin secretion and peptide hormone
     biosynthesis in islet cells or neurons. The protein may be cleaved with
     \mu calpain to generate a C-terminal fragment of that is targeted to the
     nucleus. It is preferred in accordance with the invention that said
     endocrine cells are \beta-cells and that said peptide hormone is insulin.
                              THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD
OS.CITING REF COUNT:
                         2.
                               (2 CITINGS)
REFERENCE COUNT:
                               THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS
                         6
                               RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT
    ANSWER 12 OF 28 CAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER:
                         2005:1311452 CAPLUS
DOCUMENT NUMBER:
                         144:45723
                         Splice variants of members of the pancreatic peptide
TITLE:
                         family for use in therapeutic regulation of metabolism
                         Shemesh, Ronen; Kliger, Yossef; Neville, Lewis F.;
INVENTOR(S):
                        Bernstein, Jeanne; Eshel, Dani
                        Compugen Ltd., Israel
PATENT ASSIGNEE(S):
SOURCE:
                        PCT Int. Appl., 180 pp.
                        CODEN: PIXXD2
DOCUMENT TYPE:
                        Patent
LANGUAGE:
                         English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:
     PATENT NO.
                        KIND
                               DATE APPLICATION NO.
                        ____
                               _____
                                           ______

      WO 2005118786
      A2 20051215

      WO 2005118786
      A3 20080117

                                          WO 2005-IL588
         W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,
            CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,
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LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU,

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ZA, ZM, ZW
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              RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML,
              MR, NE, SN, TD, TG, AP, EA, EP, OA
                                                 US 2005-145463
                        A1
                                   20060309
     US 20060052301
                                                                          20050602
                                                 US 2005-145463 20050602

US 2004-576414P P 20040603

US 2005-672987P P 20050420
PRIORITY APPLN. INFO.:
ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT
     Splice variants of amylin and other members of the pancreatic polypeptide
     family, namely peptide YY, peptide Y, and neuropeptide Y, are identified.
     These variants of these proteins may be useful useful in the treatment of
     metabolic disorders (no data.). Levels of these proteins may be increased
     by direct administration, or by delivery of a suitable expression vector
     carrying the corresponding coding sequence. Alternatively, levels may be
     lowered by administration of an inhibitor such as an antibody.
     Administration of a peptide YY variant was effective in slowing weight gain
     in genetically obese mice.
                                  THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD
OS.CITING REF COUNT: 1
                                  (1 CITINGS)
     ANSWER 13 OF 28 CAPLUS COPYRIGHT 2010 ACS on STN
                           2005:961959 CAPLUS
ACCESSION NUMBER:
DOCUMENT NUMBER:
                            143:261378
TITLE:
                           A method for the recombinant production of proteins
                           useful in treatment of obesity and diabetes
                            from the milk of transgenic animals, and therapeutic
                            applications
                           Olsen, Byron
INVENTOR(S):
PATENT ASSIGNEE(S):
                           Gtc Biotherapeutics, Inc., USA; Olsen, Byron
                           PCT Int. Appl., 103 pp.
SOURCE:
                           CODEN: PIXXD2
DOCUMENT TYPE:
                           Patent
                           English
LANGUAGE:
FAMILY ACC. NUM. COUNT: 4
PATENT INFORMATION:
                      KIND DATE APPLICATION NO.
     PATENT NO.
                       A2 20050901 WO 2005-US5406
A3 20061228
     WO 2005079525
     WO 2005079525
          W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,
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              GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
              LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI,
              NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY,
              TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, SM, US
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              MR, NE, SN, TD, TG
                        A1 20060817
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US 2005–58458 A1 20050215
PRIORITY APPLN. INFO.:
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ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB The current invention provides a method for the production of therapeutic proteins useful in the treatment of obesity and related conditions through the use of transgenic animals, particularly, from the milk or other bodily fluid of the transgenic animals. In particular the current invention provides for the production of Leptin and other anti-aging mols. in the milk

of transgenic mammals, particularly non-human placental mammals and provides for-the use of such transgenic proteins in therapeutic applications or disease conditions. A nuclear transfer procedure can be conducted to generate a mass of transgenic cells useful for research, serial cloning, or other in vitro use. Another aspect of this invention is directed to a method for treating Type II diabetes mellitus comprising administering to a mammal a therapeutically effective amount of a transgenic protein of interest, a prodrug thereof, or a pharmaceutically acceptable salt thereof in addition to a modified lower dosing of insulin via pump means.

OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD

(1 CITINGS)

ANSWER 14 OF 28 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2005:904226 CAPLUS

DOCUMENT NUMBER: 143:243023

TITLE: Vector constructs comprising mammary tissue-specific

promoter for production of transgenic proteins useful

in the treatment of obesity and diabetes

INVENTOR(S): Olsen, Byron V.

PATENT ASSIGNEE(S): USA

U.S. Pat. Appl. Publ., 46 pp. SOURCE:

CODEN: USXXCO

DOCUMENT TYPE: Patent LANGUAGE: English

FAMILY ACC. NUM. COUNT: 4

PATENT INFORMATION:

PATENT NO. KIND DATE APPLICATION NO. DATE _____ -----A1 20050825 US 2005-60291 US 20050186608 20050217 US 2004-545790P P 20040219 PRIORITY APPLN. INFO.:

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB Transgenic proteins therapeutically useful in the treatment of obesity and related conditions can be produced in and purified from the milk of transgenic animals. Transgene DNA constructs are described which are operatively linked to a mammary tissue-specific promoter (e.g., the β -casein promoter) which enable the transgenic protein product to be expressed in the milk of a transgenic non-human mammal. The peptides are made as transgenic proteins with a suitable transgenic partner such as human recombinant protein of interest.

ANSWER 15 OF 28 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2005:588685 CAPLUS
DOCUMENT NUMBER: 143:91055
TITLE: Glp-1 (9-36) methods and compositions

Brownlee, Michael A. INVENTOR(S):

INVENTOR(S):

PATENT ASSIGNEE(S):

Brownies, Fichael A.

Albert Einstein College of Medicine of Yeshiva

University, USA

PCT Int. Appl., 28 pp. SOURCE:

CODEN: PIXXD2

DOCUMENT TYPE: Patent LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO. KIND DATE APPLICATION NO. W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,

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               IE, SI, LT, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK, IS
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     US 20080015144 A1 20080117
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PRIORITY APPLN. INFO.:
                                                                         W 20041207
                                                    WO 2004-US40852
                                                    US 2007-582116
                                                                        A2 20070626
ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT
     Methods of inhibiting hyperglycemia-induced or free fatty
     acid-induced reactive oxygen formation in mammalian cells and mammals
     using the degradation product of glucagon-like peptide 1, GLP-1 (9-36) are
     provided. Various GLP-1 (9-36) compns. are also provided.
                                    THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD
OS.CITING REF COUNT:
                             2
                                     (2 CITINGS)
REFERENCE COUNT:
                                    THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS
                                    RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT
L6 ANSWER 16 OF 28 CAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2005:485594 CAPLUS
DOCUMENT NUMBER:
                             143:32219
TITLE:
                            Analogs of glucagon-like peptide-1 for treatment of
                             metabolic, neurological, and aging-associated
                             disorders
INVENTOR(S):
                            Dong, Zheng Xin
PATENT ASSIGNEE(S):
                            Societe de Conseils De Recherches e d'Applications
                             Scientifiques, S.A.S., Fr.
SOURCE:
                             U.S., 174 pp., Cont.-in-part of U.S. Ser. No. 206,601,
                             abandoned.
                             CODEN: USXXAM
DOCUMENT TYPE:
                             Patent
LANGUAGE:
                             Enalish
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:
                     KIND DATE APPLICATION NO. DATE
     PATENT NO.
                            B1 20050607 US 2001-857636 20011102
A2 20000615 WO 1999-EP9660 19991207
     US 6903186
     WO 2000034331 A2 20000615
WO 2000034331 A3 20001116
          W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ,
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RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF,
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                             A2 20031105 EP 2003-76490
A3 20040721
     EP 1359159
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               IE, FI, CY
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A 20040203

ZA 2003-4047

19991207

ZA 200304047

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                                                                                         20051020
                                                                                                                             US 2005-145782
                                                                                                                                                                                                    20050606
              US 7235628
                                                                      В2
                                                                                            20070626
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              JP 2006151988
                                                                                             20060615
                                                                                                                                                                                                    20051227
              JP 4386887
                                                                       В2
                                                                                            20091216
                                                                       A1 20080508
A 20080110
              US 20080108566
                                                                                                                                US 2007-781096
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              JP 2008001710
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                                                                       A1 20090806
              US 20090197802
                                                                                                                                 US 2007-929013
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PRIORITY APPLN. INFO.:
                                                                                                                                                                                      P 19981207
                                                                                                                                 US 1998-111255P
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W 19991207
                                                                                                                                 US 1998-206601
                                                                                                                             A3 19991207
A3 20011102
A3 19991207
A3 199
                                                                                                                                 WO 1999-EP9660
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ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT MARPAT 143:32219 OTHER SOURCE(S):

Peptide analogs of glucagon-like peptide-1 (GLP-1) with increased plasma half-lives that can be used to treat metabolic, neurol., and disease associated with aging are described. GLP-1 is metabolically unstable, with a plasma half-life of only 1-2 min in vivo, there is therefore a need for GLP-1 analogs that are more active or are more metabolically stable than native GLP-1. Specifically, analogs of human GLP-1(7-36) amide that are agonists for the GLP-1 receptor are described for the treatment of mammalian disorders such as type 1 and type 2 diabetes. The invention provides 773 different analogs, a preferred analog comprising (Ser8, Aib35) hGLP-1 (7-36) NH2.

THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD OS.CITING REF COUNT: 1 (1 CITINGS)

REFERENCE COUNT: 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

ANSWER 17 OF 28 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2005:347172 CAPLUS

DOCUMENT NUMBER: 142:405586

TITLE: Splice variants of preproglucagon, glucagon-like

peptide-1 and oxyntomodulin

INVENTOR(S): Shemesh, Ronen; Kliger, Yossef; Neville, Lewis F.;

Bernstein, Jeanne; Cohen-Dayag, Anat; Eshel, Dani

PATENT ASSIGNEE(S): Compugen Ltd., Israel SOURCE: PCT Int. Appl., 114 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

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DATE
    PATENT NO.
                      KIND DATE APPLICATION NO.
    W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,
            CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,
            GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
            LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI,
            NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY,
            TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
        RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM,
            AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,
            EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE,
            SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE,
            SN, TD, TG
                                          US 2003-685712 A 20031016
US 2004-576414P P 20040603
PRIORITY APPLN. INFO.:
    The present invention relates to alternative splice variants of
AΒ
    preproglucagon, glucagon-like peptide-1 (GLP-1) and oxyntomodulin (OXM),
    vectors and compns. comprising same, and methods of use thereof. This
    invention provides peptides, nucleic acid sequences which encode same,
    analogs and derivs. thereof, antibodies, which specifically recognize the
    variant sequences, compns. comprising same and methods of use thereof.
    These splice isoforms showed activities in diabetes, nervous
    system disorders, post surgery treatment, obesity and cardiovascular
    disease.
OS.CITING REF COUNT:
                      1
                             THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD
                              (1 CITINGS)
REFERENCE COUNT:
                        6
                              THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS
                              RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT
   ANSWER 18 OF 28 CAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2005:232600 CAPLUS
DOCUMENT NUMBER:
                       142:311675
TITLE:
                       Use of polypyrimidine tract binding protein in insulin
                       secretory granule biogenesis, drug screening, and
                       therapy
INVENTOR(S):
                       Solimena, Michele; Knoch, Klaus-Peter
PATENT ASSIGNEE(S):
                      Max-Planck-Gesellschaft zur Foerderung der
                       Wissenschaften e.V., Germany; Technische Universitaet
                       Dresden Medizinische Fakultaet Carl Gustav Carus
                       PCT Int. Appl., 87 pp.
SOURCE:
                       CODEN: PIXXD2
DOCUMENT TYPE:
                       Pat.ent.
                       English
LANGUAGE:
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:
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| PAI | ENT : | | | | KIN | D | DATE | | | APPL | ICAT | | | | D. | ATE | |
|-----|--------------------------|------|-----|-----|-----|-----|------|------|-----|------|------|------|-----|-----|-------------|------|-----|
| WO | 2005 | 0232 | | | A1 | _ | 2005 | 0317 | , | wo 2 | | EP10 | | | 2 | 0040 | |
| | W: | ΑE, | AG, | AL, | AM, | ΑT, | ΑU, | ΑZ, | BA, | BB, | BG, | BR, | BW, | BY, | BZ, | CA, | CH, |
| | | CN, | CO, | CR, | CU, | CZ, | DE, | DK, | DM, | DZ, | EC, | EE, | EG, | ES, | FI, | GB, | GD, |
| | | GE, | GH, | GM, | HR, | HU, | ID, | IL, | IN, | IS, | JP, | ΚE, | KG, | KP, | KR, | ΚZ, | LC, |
| | LK, LR, L | | | LS, | LT, | LU, | LV, | MA, | MD, | MG, | MK, | MN, | MW, | MX, | MZ, | NA, | NI, |
| | LK, LR, LS NO, NZ, OM | | OM, | PG, | PH, | PL, | PT, | RO, | RU, | SC, | SD, | SE, | SG, | SK, | SL, | SY, | |
| | | ТJ, | TM, | TN, | TR, | TT, | TZ, | UA, | UG, | US, | UZ, | VC, | VN, | YU, | ZA, | ZM, | ZW |
| | RW: | BW, | GH, | GM, | KΕ, | LS, | MW, | MΖ, | NA, | SD, | SL, | SZ, | TZ, | UG, | ZM, | ZW, | AM, |
| | | ΑZ, | BY, | KG, | KΖ, | MD, | RU, | ΤJ, | TM, | ΑT, | BE, | BG, | CH, | CY, | CZ, | DE, | DK, |
| | | EE, | ES, | FΙ, | FR, | GB, | GR, | HU, | ΙE, | IT, | LU, | MC, | NL, | PL, | PT, | RO, | SE, |
| | EE, ES, FI SI, SK, TR | | | TR, | BF, | ВJ, | CF, | CG, | CI, | CM, | GA, | GN, | GQ, | GW, | ${ m ML}$, | MR, | NE, |
| | | SN, | TD, | ΤG | | | | | | | | | | | | | |

A 20030910 A 20040216

AΒ The present invention relates to a method for stimulating production of secretory granules in peptide hormone-secreting endocrine cells or neurons comprising the step of promoting the presence of polypyrimidine tract binding protein (pPTB) or a biol. active fragment or derivative thereof in the cytoplasm of said cells or neurons. Preferably, the method alternatively or further comprises promoting the activity of pPTB or said biol. active fragment or derivative thereof in the cytoplasm of said cells or neurons. It is also preferred that said promotion comprises the promotion of the nucleocytoplasmic transport of pPTB. In another aspect, the invention relates to a method of screening for an agent capable of stimulating production of secretory granules in peptide hormone-secreting endocrine cells or neurons comprising the steps of (a) contacting a cell capable of forming secretory granules and expressing polypyrimidine tract binding protein (pPTB) or a biol. active fragment or derivative thereof with one or more compds.; and (b) assessing whether said one or more compds. promote the presence or activity of said polypyrimidine tract binding protein (pPTB) or said biol. active fragment or derivative thereof in the cytoplasm of said cell. The invention comprises further methods of screening for an agent useful as a cure for diabetes, sleeping disorders, or depression as well as various medical uses of an agent capable of the promotion/reduction of the presence or activity of polypyrimidine tract binding protein (pPTB) or of a biol. active fragment or derivative thereof. In alternative embodiments, the invention also includes the reduction or down regulation of pPTB or said biol. active fragment or derivative thereof. examples of the invention, glucose stimulated activation of pPTB, promoted the stability of ICA512, a receptor tyrosine phosphatase-like protein associated with insulin secretory granules, and upregulated ICA512 mRNA. Glucose stimulation promoted the binding of cytosolic pPTB to the 3'-UTR of ICA512 mRNA and pPTB binding activity correlated with ICA512 mRNA stability. Downregulation of pPTB by RNA interference decreased expression of secretory granule components with pPTB-binding sites in the 3'-untranslated region of their mRNAs. PPTB was phosphorylated on serine residue 16 in a cAMP and protein kinase A-dependent process that regulated translocation of pPTB between the nucleus and the cytoplasm.

REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 19 OF 28 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2004:732210 CAPLUS

DOCUMENT NUMBER: 141:237101

TITLE: Methods to induce the conversion of intestinal cells

into insulin-producing cells with preproglucagon

fragments

INVENTOR(S): Taniguchi, Hideki; Suzuki, Atsushi; Eto, Yuzuru

PATENT ASSIGNEE(S): Ajinomoto Co., Inc., Japan SOURCE: Eur. Pat. Appl., 23 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

| PATENT NO. | KIND DATE | APPLICATION NO. | DATE |
|----------------|-----------------|-------------------------|-------------|
| | | | |
| EP 1454629 | A2 20040908 | EP 2004-5144 | 20040304 |
| EP 1454629 | A3 20041201 | | |
| R: AT, BE, CH, | DE, DK, ES, FR, | GB, GR, IT, LI, LU, NL, | SE, MC, PT, |
| IE, SI, LT, | LV, FI, RO, MK, | CY, AL, TR, BG, CZ, EE, | HU, PL, SK |
| WO 2004078195 | A1 20040916 | WO 2004-JP2001 | 20040220 |
| W: AE, AG, AL, | AM, AT, AU, AZ, | BA, BB, BG, BR, BW, BY, | BZ, CA, CH, |

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             GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
             LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI
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            MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN,
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     US 20040214321
                         A1
                                20041028
                                           US 2004-793677
                                                                   20040305
     US 7423019
                          В2
                                20080909
                                                           A 20030307
PRIORITY APPLN. INFO.:
                                            JP 2003-61836
                                            JP 2003-358111
                                                                  20031017
ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT
     A partial peptide of a preproglucagon peptide comprising at least the
     amino acid sequence at positions 92-97 of a preproglucagon peptide is used
     as an effective ingredient of an antidiabetic drug. Methods for the
     application of this patent to insulin bioindustrial manufacture are also
     provided.
OS.CITING REF COUNT:
                               THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD
                         2
                               (2 CITINGS)
REFERENCE COUNT:
                         2
                               THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS
                               RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT
    ANSWER 20 OF 28 CAPLUS COPYRIGHT 2010 ACS on STN
                         2004:718564 CAPLUS
ACCESSION NUMBER:
DOCUMENT NUMBER:
                         141:248703
TITLE:
                        Analogs of glucagon-like peptide-1 for treatment of
                        mammalian disorders
INVENTOR(S):
                        Dong, Zheng Xin
PATENT ASSIGNEE(S):
                        Societe de Conseils de Recherches et d'Applications
                         Scientifiques S.C.R.A.S., Fr.
SOURCE:
                        PCT Int. Appl., 94 pp.
                        CODEN: PIXXD2
DOCUMENT TYPE:
                        Patent
LANGUAGE:
                         English
FAMILY ACC. NUM. COUNT:
PATENT INFORMATION:
     PATENT NO.
                        KIND
                                DATE
                                          APPLICATION NO.
                                                                 DATE
                         ____
                         A2
     WO 2004074315
                                20040902
                                          WO 2004-US4421
     WO 2004074315
                         A3
                               20041125
         W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,
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             GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
            LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI
         RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE,
            BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU,
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            GQ, GW, ML, MR, NE, SN, TD, TG
     CA 2513307
                                20040902
                                         CA 2004-2513307
                                                                   20040217
                         Α1
                                           EP 2004-711811
     EP 1594529
                         Α2
                                20051116
                                                                   20040217
     EP 1594529
                         В1
                                20100120
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     CN 1750842
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                                20060322
                                           CN 2004-80004658
                                                                   20040217
                                            JP 2006-503594
     JP 2007524579
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                                20070830
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                              20090610
                                           EP 2009-156363
     EP 2067483
                         A1
                                                                   20040217
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R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LI, LU, MC, NL, PT, RO, SE, SI, SK, TR, AL, LT, LV, MK

AT 2004-711811

TW 2004-93104154

US 2005-546303

20040217

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20050819

20100215

20070711

20060928

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A1

AT 455555

TW 283684

US 20060217300

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OTHER SOURCE(S): MARPAT 141:248703

AB The present invention is directed to peptide analogs of glucagon-like peptide-1 (GLP-1), and more specifically human GLP-1(7-36) amide, and to methods of using such analogs to have agonist effect on the GLP-1 receptor in the treatment of mammalian disorders such as type 1 and type 2 diabetes. Since GLP-1 is metabolically unstable, having a plasma half-life of only 1-2 min in vivo, there is a need for GLP-1 analogs that are more active or are more metabolically stable than native GLP-1. The invention provides 773 different analogs, a preferred analog comprising (Ser8,Aib35)hGLP-1(7-36)NH2.

OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)

REFERENCE COUNT: 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 21 OF 28 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2004:648538 CAPLUS

DOCUMENT NUMBER: 141:191072

TITLE: Preparation and use of chemically-modified metabolites

of regulatory peptides

INVENTOR(S): Peri, Krishna; Habi, Abdelkrim; Gravel, Denis

PATENT ASSIGNEE(S): Theratechnologies Inc., Can.

SOURCE: PCT Int. Appl., 52 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATE | NT N | Ο. | | | KIN | D | DATE | | | APPL | ICAT | ION : | NO. | | D | ATE | |
|--------------|-------|------|------|------|------|------|---------|-------|---------|------|------|-------|------|------|------|------|-----|
| WO 2 WO 2 | | | | | | | 2004 | | | WO 2 | 004- | CA13 | 1 | | 2 | 0040 | 130 |
| WO 2 | 0040 | 6754 | 48 | | В1 | | 2005 | 0217 | | | | | | | | | |
| | W: | ΑE, | ΑE, | AG, | AL, | AL, | AM, | AM, | AM, | ΑT, | ΑT, | AU, | AZ, | AZ, | BA, | BB, | BG, |
| | | BG, | BR, | BR, | BW, | BY, | BY, | BZ, | BZ, | CA, | CH, | CN, | CN, | co, | co, | CR, | CR, |
| | | CU, | CU, | CZ, | CZ, | DE, | DE, | DK, | DK, | DM, | DZ, | EC, | EC, | EE, | EE, | EG, | ES, |
| | | ES, | FI, | FΙ, | GB, | GD, | GE, | GE, | GH, | GM, | HR, | HR, | HU, | HU, | ID, | IL, | IN, |
| | | IS, | JP, | JP, | KE, | KE, | KG, | KG, | KP, | KP, | KP, | KR, | KR, | KΖ, | KZ, | KZ, | LC, |
| | | LK, | LR, | LS, | LS, | LT, | LU, | LV, | MA, | MD, | MD, | MG, | MK, | MN, | MW, | MX, | MX, |
| | | MΖ, | MZ, | NA, | NI | | | | | | | | | | | | |
| US 2 | 0050 | 0596 | 605 | | A1 | | 2005 | 0317 | | US 2 | 004- | 7689 | 74 | | 21 | 0040 | 130 |
| PRIORITY | APPL | Ν. : | INFO | . : | | | | | | US 2 | 003- | 4438 | 60P | | P 20 | 0030 | 131 |
| ASSIGNMEN | T HI | STOR | RY F | OR U | S PA | TENT | AVA. | ILAB | LE I | N LS | US D | ISPL. | AY F | ORMA | Τ | | |
| OTHER SOU | RCE (| S): | | | MAR | PAT | 141: | 1910 | 72 | | | | | | | | |
| AR The | insta | ntio | on r | ala+ | 20 t | n ne | nt i de | ac B. | _ A _ C | O-P | or t | hair | | | | | |

AB The invention relates to peptides B-A-CO-P or their pharmaceutically-acceptable salts, where P is a dipeptidyl-peptidase (DPPIV) peptide metabolite of regulatory peptides obtained by cleavage of the two N-terminal amino acids, A is (hetero)alk(en)(yn)ylene or Ph and B is (un)substituted (hetero)aryl or cycloalkyl. More specifically, the invention relates to conferring biol. activity to metabolites of regulatory peptides by the covalent coupling of small mols. Thus, 3-(4-methoxyphenethylamino)-3-oxopropanoyl-GLP-1 (9-36) was prepared by solid-phase peptide chemical and N-acylation and shown to produce a more significant hypoglycemic response in mice compared to native GLP-1.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 22 OF 28 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2004:370962 CAPLUS

DOCUMENT NUMBER: 140:380655

TITLE: GLP-1 derivatives and transmucosal absorption

preparations thereof

INVENTOR(S):
Hayashi, Yuji; Makino, Mitsuhiro; Kouzaki, Toshiyuki;

Takeda, Motohiro; Jomori, Takahito

PATENT ASSIGNEE(S): Sanwa Kagaku Kenkyusho Co., Ltd., Japan

SOURCE: PCT Int. Appl., 48 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| P | PATENT NO. | | | | | | D | DATE | | | | | | | | D. | ATE | |
|--------|-----------------------|------|------|--------|-----|-----|-----|------|------|-----|------|-------|------|------|-----|-----|------|-----|
| | 10 | 2004 | 0378 | 59 | | A1 | _ | 2004 | 0506 | | | 2003- | | | | 2 | 0031 | 010 |
| | | W: | ΑE, | AG, | AL, | ΑM, | ΑT, | AU, | ΑZ, | BA, | BB, | BG, | BR, | BY, | BZ, | CA, | CH, | CN, |
| | | | CO, | CR, | CU, | CZ, | DE, | DK, | DM, | DZ, | EC, | EE, | EG, | ES, | FI, | GB, | GD, | GE, |
| | | | GH, | GM, | HR, | HU, | ID, | IL, | IN, | IS, | JP, | KE, | KG, | KP, | KR, | KΖ, | LC, | LK, |
| | | | LR, | LS, | LT, | LU, | LV, | MA, | MD, | MG, | MK. | MN, | MW. | MX, | MZ. | NI, | NO. | NZ, |
| | | | | | • | | | | | , | • | SE, | | | | | | • |
| | | | | | | | | | | | | VN, | | | | | | • |
| | | RW: | | | | | | | | | | TZ, | | | | | AZ, | BY, |
| | | | KG, | KΖ, | MD, | RU, | TJ, | TM, | AT, | BE, | BG, | CH, | CY, | CZ, | DE, | DK, | EE, | ES, |
| | | | FΙ, | FR, | GB, | GR, | HU, | IE, | IT, | LU, | MC, | NL, | PT, | RO, | SE, | SI, | SK, | TR, |
| | | | | | | | | | | | | GW, | | | | | | |
| C | ŀΑ | 2502 | 118 | | | A1 | | 2004 | 0506 | | CA 2 | 2003- | 2502 | 118 | | 2 | 0031 | 010 |
| A | ΔŪ | 2003 | 2729 | 70 | | A1 | | 2004 | 0513 | | AU 2 | 2003- | 2729 | 70 | | 2 | 0031 | 010 |
| A | U | 2003 | 2729 | 70 | | В2 | | 2009 | 0528 | | | | | | | | | |
| E | ŀΡ | 1559 | 724 | | | A1 | | 2005 | 0803 | | EP 2 | 2003- | 7540 | 74 | | 2 | 0031 | 010 |
| | | R: | AT, | BE, | CH, | DE, | DK, | ES, | FR, | GB, | GR, | IT, | LI, | LU, | NL, | SE, | MC, | PT, |
| | | | IE, | SI, | LT, | LV, | FI, | RO, | MK, | CY, | AL, | TR, | BG, | CZ, | EE, | HU, | SK | |
| С | N | 1703 | 424 | | | A | | 2005 | 1130 | | CN 2 | 2003- | 8010 | 1244 | | 2 | 0031 | 010 |
| | | 1003 | | | | | | 2007 | 1212 | | | | | | | | | |
| U | IS | 2006 | 0194 | 720 | | A1 | | 2006 | 0831 | | US 2 | 2005- | 5301 | 25 | | 2 | 0051 | 027 |
| | | | | | | | | 2007 | 1106 | | | | | | | | | |
| PRIORI | RIORITY APPLN. INFO.: | | | | | | | | | | JP 2 | 2002- | 2992 | 83 | | A 2 | 0021 | 011 |
| | | | | | | | | | | | WO 2 | 2003- | JP13 | 020 | 1 | ₩ 2 | 0031 | 010 |

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB Disclosed is a GLP-1 derivative comprising a peptide having an amino acid sequence derived from the amino acid sequence of GLP-1 (7-35) by deletion, substitution and/or addition of one to several amino acids and having a GLP-1 activity to the C-terminus of which a sequence Waa-(Xaa)n-Yaa (wherein Waa represents Arg or Lys; Xaa represents Arg or Lys; n is an integer of from 0 to 14; and Yaa represents Arg, Arg-NH2, Lys, Lys-NH2 or Hse) is added. This derivative has a high transmucosal absorbability. Moreover, tolerance to dipeptidyl peptidase IV can be imparted to the derivative by substituting the 8-position of the GLP-1 amino acid sequence into Ser, while tolerance to trypsin can be imparted thereto by substituting the 26-position into Gln and the 34-position into Asn. The transmucosal absorbability of the above GLP-1 derivative can be further elevated by formulating into a preparation with the

use of a charge-controller fat emulsifier having a surface charge controlled to the neg. level.

OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD

(8 CITINGS)

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

ACCESSION NUMBER: 2004:41516 CAPLUS

DOCUMENT NUMBER: 140:105831

TITLE: Pharmaceutical compositions and uses of GLP-1 mimetics

for the treatment of diabetes

Steiness, Eva INVENTOR(S):

PATENT ASSIGNEE(S): Zealand Pharma A/S, Den. SOURCE: PCT Int. Appl., 68 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

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The present invention relates to use of GLP-1 or a related mol. having AB GLP-effect for the manufacture of a medicament for preventing or treating diabetes in a mammal. The amount and timing of administration of said medicament are subsequently reduced to produce a 'drug holiday'. Practice of the invention achieves effective therapy without continuous drug exposure and without continuous presence of therapeutic levels of the drug. The invention also discloses a method of treating diabetes and related disorders in a mammal by administering glucagon like peptide (GLP-1) or a related mol. having GLP-1 like effect and thereby providing a therapeutically effective amount of endogenous insulin.

(3 CITINGS)

REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 24 OF 28 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2003:571103 CAPLUS

DOCUMENT NUMBER: 139:122690

TITLE: Albumin fusion proteins for prolonged shelf-life of

therapeutic proteins

INVENTOR(S): Ballance, David James; Turner, Andrew John; Rosen,

Craig A.; Haseltine, William A.

PATENT ASSIGNEE(S): Human Genome Sciences, Inc., USA; Delta Biotechnology

Limited; Principia Pharmaceutical Corporation

SOURCE: PCT Int. Appl., 598 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent LANGUAGE: English

FAMILY ACC. NUM. COUNT: 10

| PATE | ENT : | | | | KIN | | DATE | | | APPL | ICAT | ION : | NO. | | D. | ATE | |
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ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT The present invention encompasses albumin fusion proteins. Many therapeutic proteins in their native state or when recombinantly produced are typically labile mols. exhibiting short shelf-lives, particularly when formulated in aqueous solns.; fusions of the therapeutic protein with human serum albumin have a longer serum half-life and/or stabilized activity in solution (or in a pharmaceutical composition) in vitro and/or in vivo than the corresponding unfused therapeutic mols. Thus, albumin fusion proteins are provided comprising granulocyte colony-stimulating factor, interleukin 2, parathormone, erythropoietin, interferon β , interferon $\alpha 2$, interferon A/D hybrid, a single-chain insulin analog, growth hormone, and

(7-36)GLP-1. Nucleic acid mols. encoding the albumin fusion proteins of the invention are also encompassed by the invention, as are vectors containing these nucleic acids, host cells transformed with these nucleic acids vectors, and methods of making the albumin fusion proteins of the invention and using these nucleic acids, vectors, and/or host cells. Addnl. the present invention encompasses pharmaceutical compns. comprising albumin fusion proteins and methods of treating or preventing diseases, disorders or conditions related to diabetes mellitus using albumin fusion proteins of the invention.

OS.CITING REF COUNT: 5 THERE ARE 5 CAPLUS RECORDS THAT CITE THIS RECORD (6 CITINGS)

L6 ANSWER 25 OF 28 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2003:571004 CAPLUS

DOCUMENT NUMBER: 139:122689

TITLE: Albumin fusion proteins for prolonged shelf-life of

therapeutic proteins

INVENTOR(S): Rosen, Craig A.; Haseltine, William A.

PATENT ASSIGNEE(S): Human Genome Sciences, Inc., USA

SOURCE: PCT Int. Appl., 1086 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent LANGUAGE: English FAMILY ACC. NUM. COUNT: 10

| P | ATENT | NO. | | | KIND DATE | | | | | APPL | ICAT | | DATE | | | | |
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ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

The present invention encompasses albumin fusion proteins. Many therapeutic proteins in their native state or when recombinantly produced are typically labile mols. exhibiting short shelf-lives, particularly when formulated in aqueous solns.; fusions of the therapeutic protein with human serum albumin have a longer serum half-life and/or stabilized activity in solution (or in a pharmaceutical composition) in vitro and/or in vivo than the corresponding unfused therapeutic mols. Thus, albumin fusion proteins are provided comprising interferon β , interferon $\alpha 2$, insulin, bone morphogenetic protein 9, glucagon-like peptide-I(7-36), a hybrid interferon A/D, and exendin 4. Nucleic acid mols. encoding the albumin fusion proteins of the invention are also encompassed by the invention, as are vectors containing these nucleic acids, host cells transformed with these nucleic acids vectors, and methods of making the albumin fusion proteins of the invention and using these nucleic acids, vectors, and/or host cells. Addnl. the present invention encompasses pharmaceutical compns. comprising albumin fusion proteins and methods of treating or preventing diseases, disorders or conditions related to diabetes mellitus using albumin fusion proteins of the invention.

OS.CITING REF COUNT: 5 THERE ARE 5 CAPLUS RECORDS THAT CITE THIS RECORD (7 CITINGS)

L6 ANSWER 26 OF 28 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1999:566074 CAPLUS

DOCUMENT NUMBER: 131:194807

TITLE: Insulinotropic N-terminally truncated GLP-1 lipophilic

derivatives with protracted action

INVENTOR(S): Knudsen, Liselotte Bjerre; Huusfeldt, Per Olaf

PATENT ASSIGNEE(S): Novo Nordisk A/s, Den. SOURCE: PCT Int. Appl., 50 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent LANGUAGE: English

FAMILY ACC. NUM. COUNT: 11

| PATENT NO. | KIN | D | DATE | | | APPLICATION NO. | | | | | | DATE | | | | |
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TR, TT, UA, UG, UZ, VN, YU, ZW RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG AU 9926105 19990915 AU 1999-26105 19990225 Α EP 1056774 Α1 20001206 EP 1999-906075 19990225 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, PT, IE, FI JP 2002508162 Τ 20020319 JP 2000-533455 19990225 PRIORITY APPLN. INFO.: DK 1998-264 A 19980227 DK 1998-509 A 19980408 WO 1999-DK81 W 19990225 OTHER SOURCE(S): MARPAT 131:194807 The present invention relates to N-terminally truncated derivs. of human qlucagon-like peptide-1 (GLP-1) and analogs thereof having a protracted profile of action, as well as the use of such derivs. in pharmaceutical compns. for the treatment of obesity, insulin dependent or non-insulin dependent diabetes mellitus. The GLP-1 derivs. have a lipophilic substituent attached to at least one amino acid residue. THERE ARE 10 CAPLUS RECORDS THAT CITE THIS OS.CITING REF COUNT: 10 RECORD (10 CITINGS) THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS REFERENCE COUNT: 7 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT ANSWER 27 OF 28 CAPLUS COPYRIGHT 2010 ACS on STN ACCESSION NUMBER: 1994:580232 CAPLUS DOCUMENT NUMBER: 121:180232 ORIGINAL REFERENCE NO.: 121:32751a,32754a TITLE: Preparation of glucagon-like peptide and insulinotropin derivatives for treating type II diabetes. INVENTOR(S): Andrews, Glenn C.; Daumy, Gaston O.; Francoeur, Michael L.; Larson, Eric R.

PATENT ASSIGNEE(S): Pfizer Inc., USA SOURCE: PCT Int. Appl., 30 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent LANGUAGE: English

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IL 1993-105928 A3 19930607

OTHER SOURCE(S): MARPAT 121:180232

AB H2NWCO2H (W = His-Asp-Glu-Phe-Glu-Arg-His-Ala-Glu-Gly-Thr-Phe-Thr-Ser-Asp-Val-Ser-Ser-Tyr-Leu-Glu-Gly-Gln-Ala-Ala-Lys-Glu-Phe-Ile-Ala-Trp-Leu-Val-Lys-Gly-Arg-Gly, His-Asp-Glu-Phe-Glu-Arg-His-Ala-Glu-Gly-Thr-Phe-Thr-Ser-Asp-Val-Ser-Ser-Tyr-Leu-Glu-Gly-Gln-Ala-Ala-Lys-Glu-Phe-Ile-Ala-Trp-Leu-Val-Lys-Gly-Arg), and derivs. thereof, having pI ≤4 or ≥7, were prepared having insulinotropic activity (no data). Thus, H-His-Ala-Glu-Gly-Thr-Phe-Thr-Ser-Asp-Val-Ser-Ser-Tyr-Leu-Glu-Gly-Gln-Ala-Ala-Lys-Glu-Phe-Ile-Ala-Trp-Leu-Val-Lys-Gly-Arg-NH2 was prepared by solid phase synthesis using BOC-protected amino acids on benzhydrylamine resin. The invention also relates to new uses of certain known derivs. of insulinotropin and truncated insulinotropin to enhance insulin action in a mammal by iontophoretic administration of such derivs.

OS.CITING REF COUNT: 4 THERE ARE 4 CAPLUS RECORDS THAT CITE THIS RECORD

(4 CITINGS)

REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 28 OF 28 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1991:1520 CAPLUS DOCUMENT NUMBER: 114:1520

ORIGINAL REFERENCE NO.: 114:327a,330a

TITLE: Cloning of complementary DNAs encoding islet amyloid

polypeptide, insulin, and glucagon precursors from a

new world rodent, the degu, Octodon degus

AUTHOR(S): Nishi, Masahiro; Steiner, Donald F.

CORPORATE SOURCE: Howard Hughes Med. Inst., Univ. Chicago, Chicago, IL,

60637, USA

SOURCE: Molecular Endocrinology (1990), 4(8), 1192-8

CODEN: MOENEN; ISSN: 0888-8809

DOCUMENT TYPE: Journal LANGUAGE: English

AB The degu, Octodon degus, is a South American hystricomorph rodent that is of interest because it develops spontaneous diabetes mellitus and has been found to have islet amyloidosis. To help clarify these problems cDNAs encoding islet amyloid polypeptide (IAPP), insulin, and glucagon precursors were cloned from this species. The predicted amino acid sequence of degu IAPP is very similar to that of nonamyloid-forming guinea pig IAPP. In contrast, degu insulin and the C-terminal region of degu glucagon are highly divergent from those of other mammals, as is also the case in the guinea pig, suggesting the existence of some form of pos. evolutionary pressure on these hormones of carbohydrate metabolism in the hystricomorph rodents.

OS.CITING REF COUNT: 23 THERE ARE 23 CAPLUS RECORDS THAT CITE THIS RECORD (23 CITINGS)

=> d ibib hitseq 28

L6 ANSWER 28 OF 28 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1991:1520 CAPLUS

DOCUMENT NUMBER: 114:1520
ORIGINAL REFERENCE NO.: 114:327a,330a

TITLE: Cloning of complementary DNAs encoding islet amyloid

polypeptide, insulin, and glucagon precursors from a

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CORPORATE SOURCE: Howard Hughes Med. Inst., Univ. Chicago, Chicago, IL,

60637, USA

SOURCE: Molecular Endocrinology (1990), 4(8), 1192-8

CODEN: MOENEN; ISSN: 0888-8809

DOCUMENT TYPE: Journal LANGUAGE: English IT 130589-22-9 130589-23-0

RL: PRP (Properties)

(amino acid sequence of)

RN 130589-22-9 CAPLUS

CN Glucagon, prepro- (Octodon degus) (9CI) (CA INDEX NAME)

SEQ 1 MKSIYFVAGL FVMLVQGSWQ HPLQDTEEKP RSFSTSQTDL LDDPDQMNED

- 51 KRHSQGTFTS DYSKFLDTRR AQDFLDWLKN TKRNRNEIAK RHDEFERHAE
- 101 GTFTSDVSSY LEGOAAKEFI AWLVKGRGRR DFPEEVTIVE ELRRRHADGS
- 151 FSDEMNTVLD HLATKDFINW LIQTKITDRK

RN 130589-23-0 CAPLUS

CN Glucagon, pro- (Octodon degus) (9CI) (CA INDEX NAME)

SEQ 1 HPLQDTEEKP RSFSTSQTDL LDDPDQMNED KRHSQGTFTS DYSKFLDTRR

51 AODFLDWLKN TKRNRNEIAK RHDEFERHAE GTFTSDVSSY LEGOAAKEFI

101 AWLVKGRGRR DFPEEVTIVE ELRRRHADGS FSDEMNTVLD HLATKDFINW

151 LIOTKITDRK

OS.CITING REF COUNT: 23 THERE ARE 23 CAPLUS RECORDS THAT CITE THIS

RECORD (23 CITINGS)

=> d ibib hitseq 27

L6 ANSWER 27 OF 28 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1994:580232 CAPLUS DOCUMENT NUMBER: 121:180232

ORIGINAL REFERENCE NO.: 121:32751a,32754a

TITLE: Preparation of glucagon-like peptide and

insulinotropin derivatives for treating type II

diabetes.

INVENTOR(S): Andrews, Glenn C.; Daumy, Gaston O.; Francoeur,

Michael L.; Larson, Eric R.

PATENT ASSIGNEE(S): Pfizer Inc., USA SOURCE: PCT Int. Appl., 30 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

| PA7 | CENT : | NO. | | | KINI |) | DATE | | | APPL | ICAT | ION I | NO. | | D. | ATE | |
|-----|--------|-----|-----|-----|------|-----|------|------|-----|------|------|-------|-----|-----|-----|------|-----|
| | | | | | | _ | | | | | | | | | - | | |
| WO | 9325 | 579 | | | A1 | | 1993 | 1223 | | WO 1 | 993- | US33 | 88 | | 1 | 9930 | 414 |
| | W: | ΑU, | BR, | CA, | CZ, | DE, | JP, | KR, | NO, | NΖ, | PL, | RU, | SK, | US | | | |
| | RW: | ΑT, | BE, | CH, | DE, | DK, | ES, | FR, | GB, | GR, | IE, | ΙT, | LU, | MC, | NL, | PT, | SE |
| ΑU | 9340 | 275 | | | A | | 1994 | 0104 | | AU 1 | 993- | 4027 | 5 | | 1 | 9930 | 414 |
| AU | 6711 | 17 | | | В2 | | 1996 | 0815 | | | | | | | | | |
| EP | 6461 | 28 | | | A1 | | 1995 | 0405 | | EP 1 | 993- | 9095 | 05 | | 1 | 9930 | 414 |
| | R: | ΑT, | BE, | CH, | DE, | DK, | ES, | FR, | GB, | GR, | ΙE, | ΙT, | LI, | LU, | NL, | PT, | SE |

| - | 07504 25752 | | | | T B2 | | 0525 0122 | JP | 1993- | 501448 | | | 19930414 |
|---------|----------------|-----|------|-----|---------|---------|--------------|--------|--------|---------|-----|----|-----------|
| - | 93065 | | | | A | | 0915 | BR | 1993- | 6551 | | | 19930414 |
| PL | 17600 | 7 | | | В1 | 1999 | 0331 | PL | 1993- | 306766 | | | 19930414 |
| RU | 21286 | 63 | | | C1 | 1999 | 0410 | RU | 1994- | 46251 | | | 19930414 |
| EP | 96901 | . 6 | | | A2 | 2000 | 0105 | EP | 1999- | 110184 | | | 19930414 |
| | R: | ΑT, | BE, | CH, | DE, | DK, ES, | FR, | GB, GI | R, IT, | LI, LU, | NL, | SE | E, PT, IE |
| CA | 21381 | 61 | | | С | 2003 | 1021 | CA | 1993- | 2138161 | | | 19930414 |
| IL | 12089 | 0 | | | A | 2000 | 0831 | IL | 1993- | 120890 | | | 19930607 |
| HU | 64367 | 7 | | | A2 | 1993 | 1228 | HU | 1993- | 1739 | | | 19930614 |
| CN | 10859 | 13 | | | Α | 1994 | 0427 | CN | 1993- | 108718 | | | 19930614 |
| CN | 10570 | 98 | | | С | 2000 | 1004 | | | | | | |
| NO | 94048 | 353 | | | A | 1994 | 1214 | NO | 1994- | 4853 | | | 19941214 |
| PRIORIT | Y APPI | JN. | INFO | .: | | | | US | 1992- | 899073 | P | 1 | 19920615 |
| | | | | | | | | EP | 1993- | 909505 | P | 73 | 19930414 |
| | | | | | | | | WO | 1993- | US3388 | P | 7 | 19930414 |
| | | | | | | | | IL | 1993- | 105928 | P | 73 | 19930607 |

OTHER SOURCE(S): MARPAT 121:180232

IT 157507-31-8DP, resin bound

RL: SPN (Synthetic preparation); PREP (Preparation)

(preparation of, as intermediate for drug for enhancing insulin action)

RN 157507-31-8 CAPLUS

CN Glucagon-like peptide 1 (Rana catesbeiana), 3-L-glutamic

acid-10-L-valine-16-glycine-17-L-glutamine-23-L-isoleucine-24-L-alanine-27-

L-valine-31-glycine-32-L-argininamide- (9CI) (CA INDEX NAME)

NTE modified

SEQ 1 HAEGTFTSDV SSYLEGQAAK EFIAWLVKGR GR

Absolute stereochemistry.

NH₂

PAGE 1-C

PAGE 1-E

IT 157507-31-8P 157569-66-9DP, succinoylated 157569-66-9P 157629-57-7P 157629-58-8P

157629-61-3P

RL: SPN (Synthetic preparation); PREP (Preparation) (preparation of, for enhancing insulin action)

RN 157507-31-8 CAPLUS

Glucagon-like peptide 1 (Rana catesbeiana), 3-L-glutamic acid-10-L-valine-16-glycine-17-L-glutamine-23-L-isoleucine-24-L-alanine-27-L-valine-31-glycine-32-L-argininamide- (9CI) (CA INDEX NAME)

NTE modified

CN

SEQ

1 HAEGTFTSDV SSYLEGQAAK EFIAWLVKGR GR

Absolute stereochemistry.

PAGE 1-A

PAGE 1-B

PAGE 1-D

RN 157569-66-9 CAPLUS
CN 7-36-Glucagon-like peptide 1 (Octodon degus), 36a-glycine-36b-L-arginine(9CI) (CA INDEX NAME)

SEQ 1 HAEGTFTSDV SSYLEGQAAK EFIAWLVKGR GR

Absolute stereochemistry.

PAGE 1-C

PAGE 1-E

PAGE 2-B

RN 157569-66-9 CAPLUS

CN 7-36-Glucagon-like peptide 1 (Octodon degus), 36a-glycine-36b-L-arginine-(9CI) (CA INDEX NAME)

SEQ 1 HAEGTFTSDV SSYLEGQAAK EFIAWLVKGR GR

Absolute stereochemistry.

PAGE 1-C

PAGE 1-E

PAGE 2-B

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RN 157629-57-7 CAPLUS

CN 7-36-Glucagon-like peptide 1 (Octodon degus), 36a-glycine-36b-L-arginine-36c-L-arginine- (9CI) (CA INDEX NAME)

SEQ 1 HAEGTFTSDV SSYLEGQAAK EFIAWLVKGR GRR

RN 157629-58-8 CAPLUS

CN Glucagon-like peptide 1 (Rana catesbeiana), 3-L-glutamic acid-10-L-valine-16-glycine-17-L-glutamine-23-L-isoleucine-24-L-alanine-27-L-valine-31-glycine-32-L-arginine-32a-L-argininamide- (9CI) (CA INDEX NAME)

NTE modified

SEQ 1 HAEGTFTSDV SSYLEGQAAK EFIAWLVKGR GRR

RN 157629-61-3 CAPLUS

CN Glucagon-like peptide 1 (Rana catesbeiana),
N-(3-carboxy-1-oxopropyl)-3-L-glutamic
acid-10-L-valine-16-glycine-17-L-glutamine-20-[N6-(3-carboxy-1-oxopropyl)L-lysine]-23-L-isoleucine-24-L-alanine-27-L-valine-28-[N6-(3-carboxy-1-oxopropyl)-L-lysine]-31-glycine-32-L-arginine- (9CI) (CA INDEX NAME)

NTE modified (modifications unspecified)

SEO 1 HAEGTFTSDV SSYLEGOAAK EFIAWLVKGR GR

OS.CITING REF COUNT: 4 THERE ARE 4 CAPLUS RECORDS THAT CITE THIS RECORD

(4 CITINGS)

REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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=> 12 and (diabetes or hyperglycemia or stroke)
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73 L2

173773 DIABETES

28634 HYPERGLYCEMIA

35 HYPERGLYCEMIAS

28653 HYPERGLYCEMIA

(HYPERGLYCEMIA OR HYPERGLYCEMIAS)

46954 STROKE

3029 STROKES

48621 STROKE

(STROKE OR STROKES)

L7 28 L2 AND (DIABETES OR HYPERGLYCEMIA OR STROKE)

=> d ibib hitseq 26

L7 ANSWER 26 OF 28 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1999:566074 CAPLUS

DOCUMENT NUMBER: 131:194807

TITLE: Insulinotropic N-terminally truncated GLP-1 lipophilic

derivatives with protracted action

INVENTOR(S): Knudsen, Liselotte Bjerre; Huusfeldt, Per Olaf

PATENT ASSIGNEE(S): Novo Nordisk A/s, Den. SOURCE: PCT Int. Appl., 50 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent LANGUAGE: English FAMILY ACC. NUM. COUNT: 11

FAMILI ACC. NOM. COUNT:

PATENT INFORMATION:

| PA: | TENT | ΝΟ. | | | KIND DATE | | | | APPL | ICAT | ION 1 | DATE | | | | | | |
|---------|------------------------|------|-----|-----|--------------|-----|------|------|----------------|------------|----------|----------|------------|------------|-----|------|-----|----|
| WO | 9943705 | | | | A1 19990902 | | | | | WO 1 | 999- | DK81 | 19990225 | | | | | |
| | W: | | | | | | BA, | | | | | | | | | | | |
| | | DK, | EE, | ES, | FΙ, | GB, | GD, | GE, | GH, | GM, | HR, | HU, | ID, | ΙL, | IN, | IS, | JP, | |
| | | KΕ, | KG, | ΚP, | KR, | ΚZ, | LC, | LK, | LR, | LS, | LT, | LU, | LV, | MD, | MG, | MK, | MN, | |
| | | MW, | MX, | NO, | NΖ, | PL, | PT, | RO, | RU, | SD, | SE, | SG, | SI, | SK, | SL, | ΤJ, | TM, | |
| | | TR, | ΤΤ, | UA, | UG, | UΖ, | VN, | YU, | ZW | | | | | | | | | |
| | RW: | GH, | GM, | ΚE, | LS, | MW, | SD, | SL, | SZ, | UG, | ZW, | AT, | BE, | CH, | CY, | DE, | DK, | |
| | | ES, | FI, | FR, | GB, | GR, | ΙE, | ΙT, | LU, | MC, | NL, | PT, | SE, | BF, | ВJ, | CF, | CG, | |
| | | CI, | CM, | GA, | GN, | GW, | ML, | MR, | ΝE, | SN, | TD, | TG | | | | | | |
| AU | 9926 | 105 | | | A | | 1999 | 0915 | AU 1999-26105 | | | | | 19990225 | | | | |
| EP | 1056 | 774 | | | A1 | | 2000 | 1206 | EP 1999-906075 | | | | | 19990225 | | | | |
| | R: | AT, | BE, | CH, | DE, | DK, | ES, | FR, | GB, | GR, | ΙT, | LI, | LU, | NL, | SE, | PT, | ΙE, | FΙ |
| JP | 2002 | 5081 | 62 | | T | | 2002 | 0319 | | JP 2 | 000- | 5334 | 55 | | 1 | 9990 | 225 | |
| PRIORIT | PRIORITY APPLN. INFO.: | | | | | | | | | DK 1 | 998- | 264 | A 19980227 | | | | | |
| | | | | | | | | | | DK 1 | 998- | 509 | | A 19980408 | | | | |
| | | | | | WO 1999-DK81 | | | | | W 19990225 | | | | | | | | |

OTHER SOURCE(S): MARPAT 131:194807

IT 240497-60-3DP, lipophilic derivs. 240497-61-4DP,

lipophilic derivs.

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(preparation of insulinotropic GLP-1 lipophilic derivs. with protracted action)

RN 240497-60-3 CAPLUS

CN L-Arginine, L-alanyl-L- α -glutamylglycyl-L-threonyl-L-phenylalanyl-L-threonyl-L-seryl-L- α -aspartyl-L-valyl-L-seryl-L-seryl-L-tyrosyl-L-leucyl-L- α -glutamylglycyl-L-glutaminyl-L-alanyl-L-alanyl-L-lysyl-L- α -glutamyl-L-phenylalanyl-L-isoleucyl-L-alanyl-L-tryptophyl-L-leucyl-L-valyl-L-lysylglycyl-L-arginylglycyl- (9CI) (CA INDEX NAME)

SEQ 1 AEGTFTSDVS SYLEGQAAKE FIAWLVKGRG R

Absolute stereochemistry.

PAGE 1-B

PAGE 1-D

PAGE 2-C

ОН

RN 240497-61-4 CAPLUS

CN L-Arginine, L-alanyl-L- α -glutamylglycyl-L-threonyl-L-phenylalanyl-L-threonyl-L-seryl-L- α -aspartyl-L-valyl-L-seryl-L-seryl-L-tyrosyl-L-

 $\label{leucyl-L-alanyl-L-alanyl-L-alanyl-L-lysyl-L-alanyl-L-lysyl-L-alanyl-L-lysyl-L-alanyl-L-lysyl-L-arginyl-L-lysylglycyl-L-arginylglycyl-L-arginyl- (9CI) (CA INDEX NAME) \\$

SEQ 1 AEGTFTSDVS SYLEGQAAKE FIAWLVKGRG RR

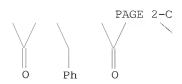
Absolute stereochemistry.

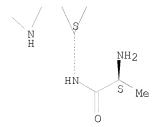
NH₂

PAGE 1-C









OS.CITING REF COUNT: 10 THERE ARE 10 CAPLUS RECORDS THAT CITE THIS

RECORD (10 CITINGS)

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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